

CLAIMS

1. A composition comprising a soft ethylene elastomer, a filler, silicone, and optionally a compatibilizer to impart improved scratch and mar resistance properties to the composition while not significantly decreasing the softness of the composition wherein the filler is mica, a wet-ground mica, talc, clay, activated alumina, a platy filler, or combinations of two or more thereof and the compatibilizer is a functionalised polyolefin.
2. The composition of claim 1 wherein the filler comprises from about 1% to about 20%, about 2% to about 15%, or about 3% to about 12%, or about 4% to about 10% by weight of the total composition; the silicone comprises from about 0.1 to about 2.5 %, about 0.2 to about 1.0%, or about 0.25 to about 0.6% of the total composition; and the filler is a wet-ground mica of 325 mesh, activated alumina, or both.
3. The composition of claim 2 wherein the silicone has a fluid viscosity of at least 1,000 CSt, preferably at least 10,000 CSt.
4. The composition of claim 3 wherein the higher molecular weight silicone is a polydimethylsiloxane.
5. The composition of claim 4 wherein the composition comprises the compatibilizer in an amount from about 0.1% to about 10%, or about 0.25% to about 7% by weight of the total composition.
6. The composition of claim 5 wherein the compatibilizer is a maleic anhydride grafted polyolefin or a maleic anhydride grafted EAO polymer.
7. The composition of any one of claim 6 wherein the soft ethylene elastomer is a low gel thermoplastic elastomer modified by a rheology-modifier and comprising at least one elastomeric EAO polymer or EAO polymer blend and at least one high melting polymer including polypropylene homopolymers and propylene/ethylene copolymers
8. The composition of claim 7 wherein the rheology-modifier is a peroxide comprising α , α' -bis(t-butylperoxy)-diisopropylbenzene, dicumyl peroxide, 2,5-dimethyl-2,5-di-(t-butyl peroxy)hexane, di-t-butylperoxide, 2,5-di(t-amyl peroxy)-2,5-dimethylhexane, 2,5-di-(t-butylperoxy)- 2,5-diphenylhexane, bis(alpha-methylbenzyl)peroxide, benzoyl peroxide, or t-butyl perbenzoate, bis(t-butylperoxy)-diisopropylbenzene.
9. The composition of claim 8 wherein the rheology-modifier further comprises at least one suitable co-agent with the peroxide.

10. The composition of claim 9 further comprising at least one additive including EAOs that have not been rheology modified, process oils, plasticizers, specialty additives or pigments wherein the specialty additive comprises frame retardant, antioxidant, surface tension modifier, anti-block agent, lubricant, organometallic antimicrobial agent,
 - 5 isothiazolone antimicrobial agent, organosulfur antimicrobial agent, mercaptan, phenolic antioxidant, secondary amine, phosphite, thioester, quaternary ammonium compound, amine antistatic agent, ethoxylated antistatic agent, propoxylated antistatic agent, glycerol cantistatic agent, hydrolytic stabilizers, fatty acid, fatty alcohol, fatty ester, fatty amide, metallic stearate, paraffinic wax, microcrystalline wax, orthophosphoric acid
 - 10 ester, fine-particle mold release agent, powdered solid mold release agent, polyglycol, trimethylol propane tristearate, pentaerythritol tetrastearate, ester of dibasic acid, dibasic acid anhydride, o-phthalate, adipate, benzoate, organotin mercaptide, an octyl ester of thioglycolic acid, a barium or cadmium carboxylate, ultraviolet light stabilizer, a hindered amine, an o-hydroxy-phenylbenzotriazole, a 2-hydroxy,4-alkoxyenzophenone, a
 - 15 salicylate, a cyanoacrylate, a nickel chelate, a benzylidene malonate, a benzylidene oxalanilide, zeolite, or deodorizer.
 11. A process comprising adding a filler, silicone, and optionally a compatibilizer to a soft ethylene elastomer composition at a mixing temperature from about 180°C to about 220°C, or about 190°C to about 210°C to produce a second composition; and pelletizing
 - 20 the second composition of step (a) at a second temperature below the mixing temperature wherein the filler and the compatibilizer are the same as recited in claim 1.
 12. The process of claim 11 further comprising the compatibilizer, which is the same as recited in claim 6.
 13. The process of claim 12 wherein each of the filler and the compatibilizer is added
 - 25 as a pre-made masterbatch and the filler is the same as recited in claim 2.
 14. The process of claim 13 wherein the silicone is a polydimethylsiloxane.
 15. An article comprising at least one component fabricated from a composition comprising a soft ethylene elastomer wherein the composition is as recited in claim 1 and the article includes automobile interior part, automobile exterior part, consumer good
 - 30 with soft touch grip, consumer appliance with soft touch surfaces, or automotive airbag.
 16. The article of claim 16 wherein the composition is as recited in claim 2.
 17. The article of claim 16 wherein the composition is as recited in claim 6.
 18. The article of claim 16 wherein the composition is as recited in claim 8.
 19. The article of claim 16 wherein the composition is as recited in claim 10.